Title (en)

APPARATUS AND METHOD FOR ADJUSTING PERFORMANCE OF ACOUSTIC RESONATOR ON THE BASIS OF BEAM AND EAVE DIMENSION

Title (de)

VORRICHTUNG UND VERFAHREN ZUR ANPASSUNG DER LEISTUNG EINES AKUSTISCHEN RESONATORS AUF DER BASIS VON STRAHL- UND WELLENDIMENSIONEN

Title (fr)

APPAREIL ET PROCÉDÉ DESTINÉS À RÉGLER LA PERFORMANCE D'UN RÉSONATEUR ACOUSTIQUE SUR LA BASE D'UNE DIMENSION DE BARRE ET D'AVANT-TOIT

Publication

EP 3907884 A1 20211110 (EN)

Application

EP 19907323 A 20191127

Priority

- CN 201811651302 A 20181231
- CN 2019121109 W 20191127

Abstract (en)

The present disclosure relates to a bulk acoustic resonator, including: a substrate; an acoustic mirror; a bottom electrode arranged above the substrate; a top electrode; and a piezoelectric layer arranged above the bottom electrode and between the bottom electrode and the top electrode, wherein: the overlapping region of the acoustic mirror, the bottom electrode, the piezoelectric layer and the top electrode in the thickness direction of the resonator constitutes an effective region of the resonator; an eave structure is formed on the edge of one side of the top electrode, and the projection of the eave structure along the thickness direction of the resonator falls into the region of the acoustic mirror; a beam structure is arranged at the connection portion of the top electrode, the beam structure includes a first beam portion and a second beam portion, the projection of the first beam portion in the thickness direction of the resonator falls into the region of the acoustic mirror, the gap formed by the first beam portion has a first beam gap width, the projection of the second beam portion in the thickness direction of the resonator is beyond the region of the acoustic mirror and overlaps the bottom electrode, and the second beam portion has a second beam gap width; and the effective electromechanical coupling coefficient of the resonator is in the range of 95%-102% of the effective electromechanical coupling coefficient of a reference resonator.

IPC 8 full level

H03H 9/02 (2006.01)

CPC (source: CN EP)

H03H 9/02015 (2013.01 - CN); **H03H 9/02047** (2013.01 - CN); **H03H 9/02118** (2013.01 - EP); **H03H 9/02157** (2013.01 - EP); **H03H 9/0504** (2013.01 - CN); **H03H 9/173** (2013.01 - EP); **H03H 9/6456** (2013.01 - CN)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3907884 A1 20211110; **EP 3907884 A4 20220223**; CN 111384911 A 20200707; WO 2020140654 A1 20200709

DOCDB simple family (application)

EP 19907323 A 20191127; CN 201811651302 A 20181231; CN 2019121109 W 20191127